REMARKS/ARGUMENTS

Applicants request reconsideration of this application in view of the present Amendment.

By this Amendment, the drawings have been amended to replace apparatus names with reference numerals corresponding to the reference numerals in the specification. Applicants request the withdrawal of the objection to the drawings. Claims 1-3, 5, 9-11, 14 and 19-25 have been amended to more clearly define the invention. Claims 1-25 remain pending.

As amended claim 1 recites steps for producing and analyzing an effluent containing a reaction product produced by one or more components of a material library. Importantly, the reaction product is analyzed with a photoacoustic technique. The first step of claim 1 involves obtaining an effluent comprising at least one reaction product and/or starting material by introducing a starting material into the sections of a substrate. The second step comprises the analysis of the effluent by recording and analyzing at least one photoacoustic signal. Claim 2 comprises the making of such a material library. The patent application relates also to an apparatus for carrying out the method described above, comprising a holder to hold at least two individual building blocks, an inlet to introduce a starting material, and electronics for detecting and analyzing photoacoustic signals.

Cong teaches away from the use of photoacoustic spectroscopy with a material library. The disclosure of Cong contains two distinct teachings. First, Cong teaches that photothermal techniques, which include photoacoustic spectroscopy, have been successfully used in trace gas detection. However, Cong notes that these techniques as currently practiced are unsuitable for screening material libraries. Second, Cong teaches, in a complete departure from the prior art, a modified photothermal deflection spectroscopy technique that he has developed to overcome the shortcomings of the known techniques. Applicant's respectfully submit that only hindsight gained by improper reference to the present application would enable a person of skill in the art to apply photoacoustic spectroscopy to a material library.

More specifically, in his Background section, Cong teaches that useful detection methods for trace gas detection can be "[p]hotothermal detection spectroscopy, which includes photothermal deflection, photoacoustic spectroscopy, thermal lensing, and interferometry . . . ."

Cong, Column 2, lines 7-10. However, Cong also teaches that "photothermal detection methods are in many instances unsuitable for screening large libraries of catalytic materials because their sensitivity is limited by the sample pressure." Column 2, lines 64-67; *see also* Column 2, lines 4-6. Therefore, Cong expresses clearly that photothermal detection methods in general (including photoacoustic spectroscopy) are unsuitable for analyzing large libraries of catalytic material because of their limited sensitivity.

Cong's invention represents a complete departure from these photothermal detection techniques and his disclosure teaches away from these techniques as they are known in the art. Cong's new method overcomes the "sensitivity" problem of the prior art photothermal detection techniques by completely departing from the teachings of the prior art. Cong's invention requires the addition of a buffer gas to the detection cell prior to an optical spectroscopic analysis. Cong, Column 4, lines 27-40. Further, even if a person skilled in the art were to consider Cong, he is only taught to use the modified method, which requires the use of an optical spectroscopic technique and the addition of a buffer gas to the detection cell.

In addition to optical spectroscopy techniques being fundamentally different from photoacoustic techniques, Cong only teaches one optical spectroscopic technique. The only optical spectroscopic technique taught by Cong to be useful with his new method is photothermal deflection spectroscopy (PTD). *See* Cong, Column 2, lines 22 to 24; Column 8, Examples 1 and 2. PTD relies on a change in refractive index due to local heating of the sample gas. During PTD, gaseous molecules are heated by means of a first laser. This heating causes a change in the density of the gas molecules, which can be monitored by changes in how the light from a second laser is scattered. PTD requires that the two lasers are adjusted such that their light beams are exactly perpendicular to each other. In contrast, the photoacoustic method used according to the present invention uses only one laser to irradiate the sample and then the resulting acoustic signal is measured by a microphone.

Not only is the method used according to the present invention fundamentally different from the PTD technique taught by Cong, the method of the present invention is more reliable because the adjustment requirements in the photoacoustic measurements are significantly lower

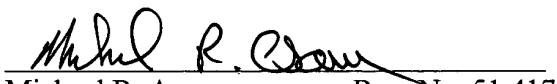
than in PTD, in which it is of utmost importance that the two laser beams are adjusted such that they exactly define an angle of 90°.

Applicants respectfully submit that Cong does not teach or suggest the analysis of an effluent obtained in a reaction from a material library according to the present invention by recording and analyzing at least one photoacoustic signal. Therefore, applicants request withdrawal of all the claim rejections under 35 U.S.C. § 103(a).

Conclusion

Applicants respectfully submit that this Amendment places the application in condition for allowance and allowance is requested.

Respectfully submitted,



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